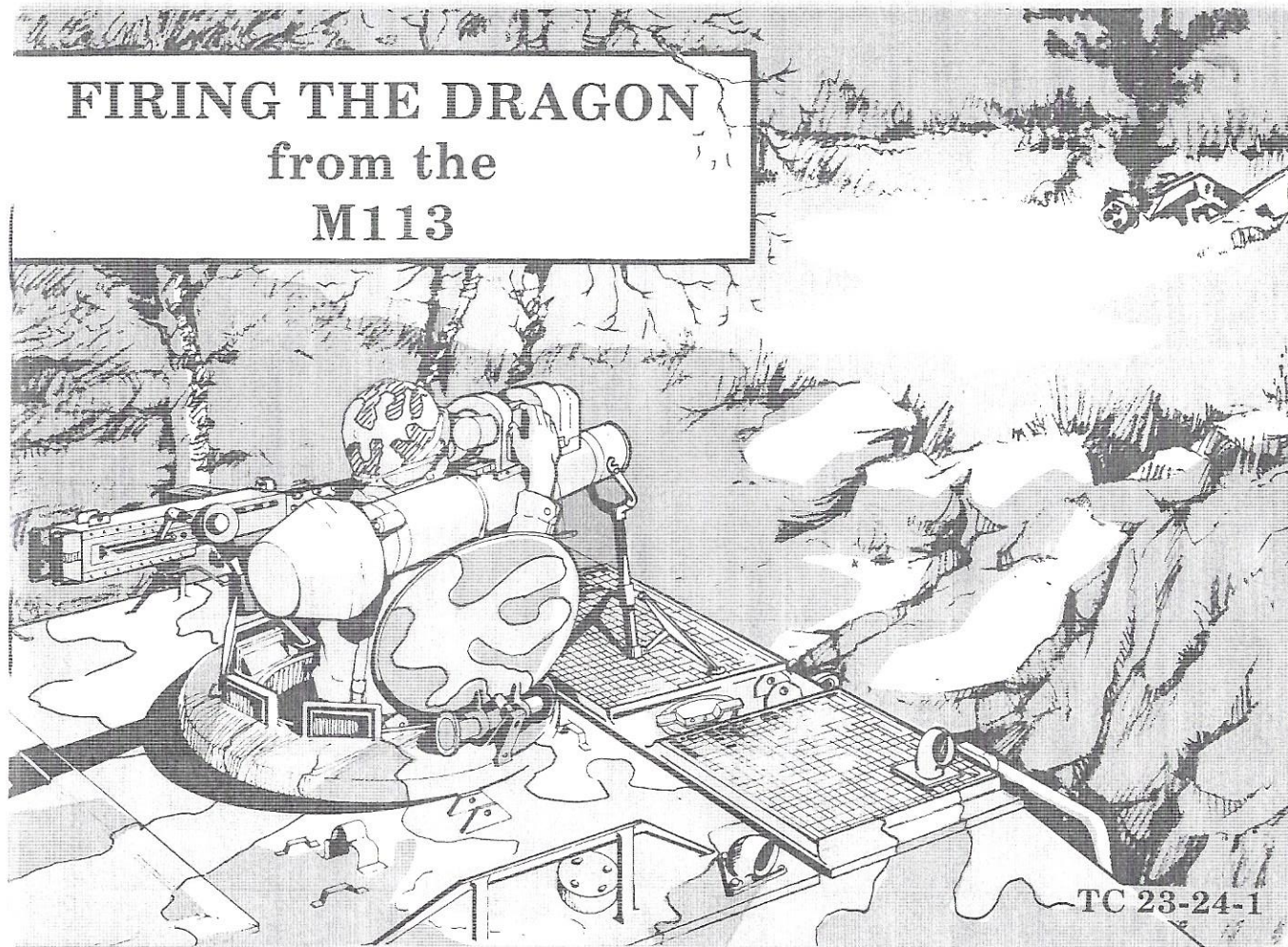


FIRING THE DRAGON from the M113



Users of this circular are encouraged to submit recommendations to improve its clarity and accuracy. Comments should be keyed to specific page, paragraph, and line of the text in which the change is recommended. They should provide reasons for each comment to insure understanding and to permit complete evaluation. **Comments should be prepared using DA Form 2028 (Recommended Changes to Publications) and forwarded direct to the Commandant, United States Army Infantry School, ATTN: ATSH-I-V-TL, Fort Benning, Georgia 31905.**

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PURPOSE AND SCOPE

The purpose of this training circular is to outline procedures for firing the Dragon weapon system from the M113 Armored Personnel Carrier (APC). The methods and fundamentals presented are interim measures, pending development and issue of a viscous damped mount on the APC for the Dragon. The circular also addresses safety requirements and special training related to firing the Dragon from the APC. This TC is compatible with the doctrine presented in TC 7-4, The Mechanized Infantry Platoon; TC 7-24, Antiarmor Tactics and Techniques for Mechanized Infantry; and TC 23-20 (Draft), Unit Antiarmor Training Program.

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INTRODUCTION

In mobile warfare, the mechanized infantry platoon will be opposed by superior numbers of enemy armored vehicles. Thus, mechanized infantry must maximize its mobility and firepower to survive that threat and win on the modern battlefield. It can enhance its firepower and mobility by firing the Dragon, the primary AT weapon of the mechanized platoon, from the APC. Firing from the APC may allow you to fire the first shot and therefore increase your lethality on the battlefield and should be done from a hull-down position to enhance survivability. Initial tests indicate that the Dragon is just as effective when fired from the firing positions shown in this TC as it is from ground firing positions. With the Dragon the platoon has the capability of hitting armor out to 1,000 meters and, given a hit, the Dragon can destroy any tank on the battlefield. Procedures for firing the Dragon from the APC are compatible with existing tactics for mechanized infantry.

The Dragon may be fired from the track commander's hatch, the top of the APC, or the cargo hatch - all during short halts, either while in the overwatch or from hasty defense or delay positions. The preferred firing position is from the commander's hatch firing to the front; however, the firing position actually used will depend on the tactical situation.

Firing Position:	Advantages	Disadvantages
Commander's Hatch	Stable when bipod feet are anchored in the intake and exhaust grills. APC can be moved quickly. Permits one man to employ either the Dragon or the cal .50 MG. Allows the gunner to quickly enter or exit the APC.	Cal .50 MG cannot be used for suppression while gunner is getting ready to fire the Dragon.
Deck	Stable when bipod feet are anchored in the intake and exhaust grills. Cal .50 MG can fire suppression while gunner is preparing to fire the Dragon. Allows driver and cal .50 gunner to observe before, during, and after firing. Gunner can use the kneeling position for added height.	Gunner cannot enter and exit APC quickly. APC cannot be moved quickly.
Cargo hatch	Best for surprise targets. APC can be moved quickly.	Gunner has small sector of fire.

- Trigger
- Tracker
- Eye-trac
- Breath

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Advantages

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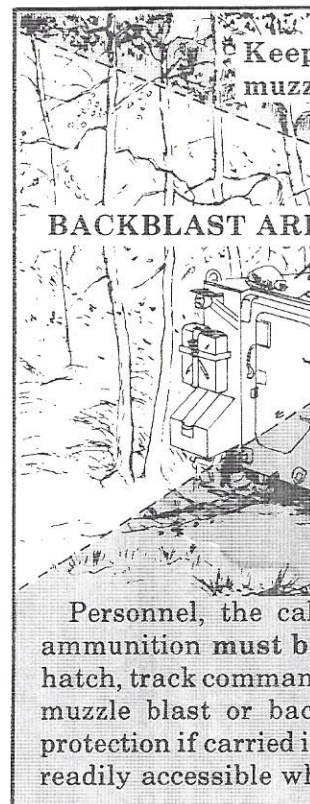
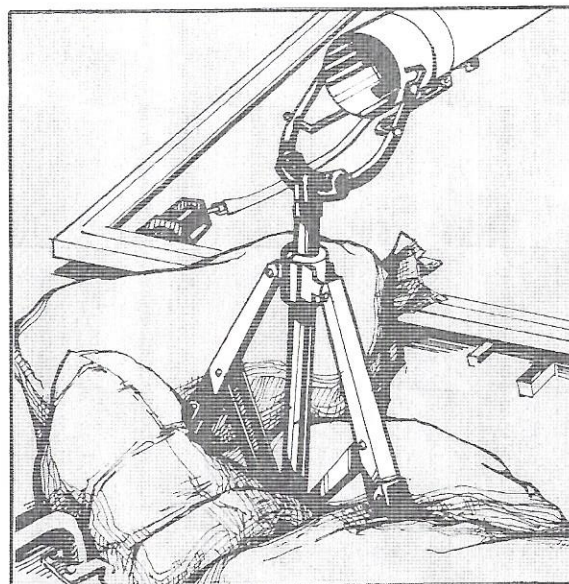
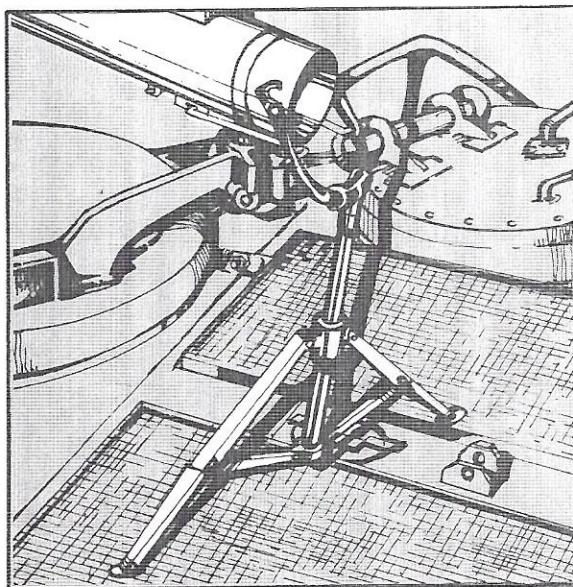
FUNDAMENTALS

The basic marksmanship factors which apply when firing the Dragon from a ground mount also apply when firing it from the APC:

- Trigger grip.
- Tracker grip.
- Eye-tracker interface.
- Breath control.
- Shoulder-round interface.
- Foot-bipod positioning (sitting).
- Body-support positioning (standing).
- Bipod placement.

THE BIPOD FEET

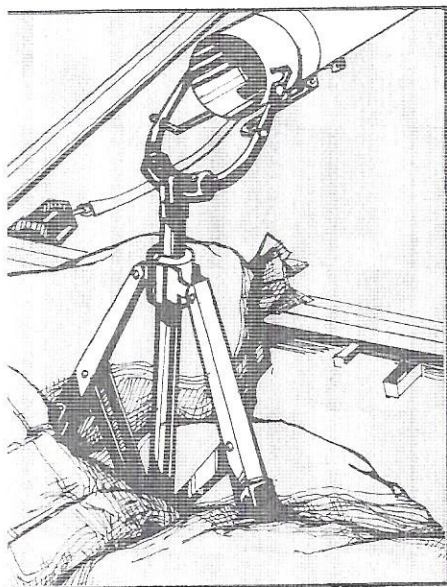
Since the bipod feet cannot be firmly anchored on the APC deck, the intake and exhaust grills, sandbags, C-ration cases, or duffle bags must be used as expedients to anchor the bipod.



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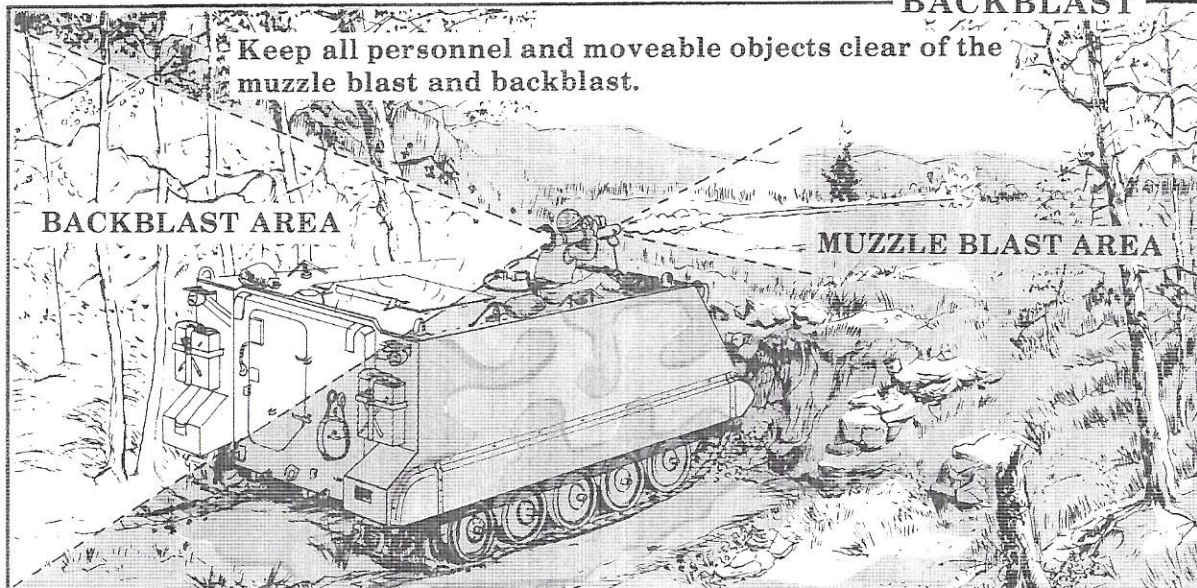


BACKBLAST

Keep all personnel and moveable objects clear of the muzzle blast and backblast.

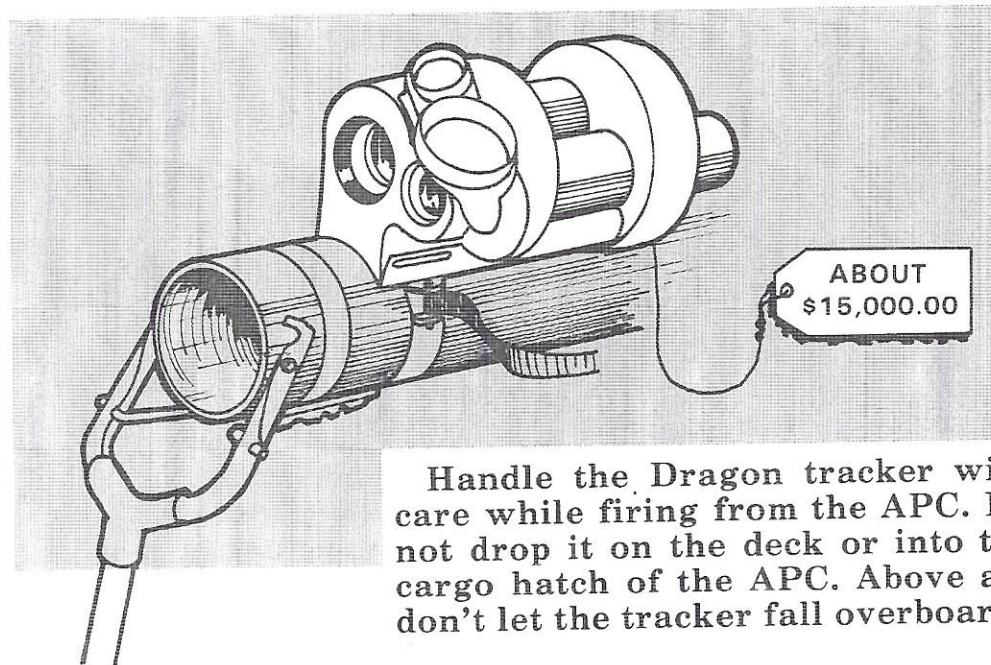
BACKBLAST AREA

MUZZLE BLAST AREA



Personnel, the caliber .50 machinegun, radio antennas, combustible material, and ammunition **must** be clear of the muzzle blast and backblast during firing. The driver's hatch, track commander's hatch, and the cargo hatch must be closed if they are in either the muzzle blast or backblast area. Dragon rounds and the tracker receive the greatest protection if carried inside the APC; however, they may be carried on the deck to make them readily accessible when the situation requires.

HANDLE WITH CARE



Handle the Dragon tracker with care while firing from the APC. Do not drop it on the deck or into the cargo hatch of the APC. Above all, don't let the tracker fall overboard.

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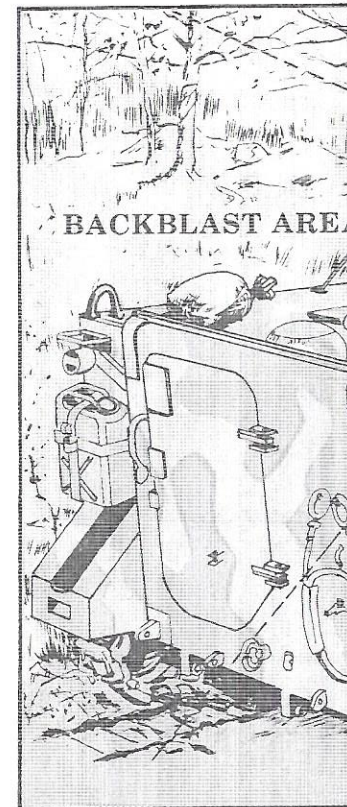
If the tactical situation warrants, the APC engine should be turned off to eliminate vehicle vibration during firing.

Cover and concealment for the APC are essential, as in any tactical situation.

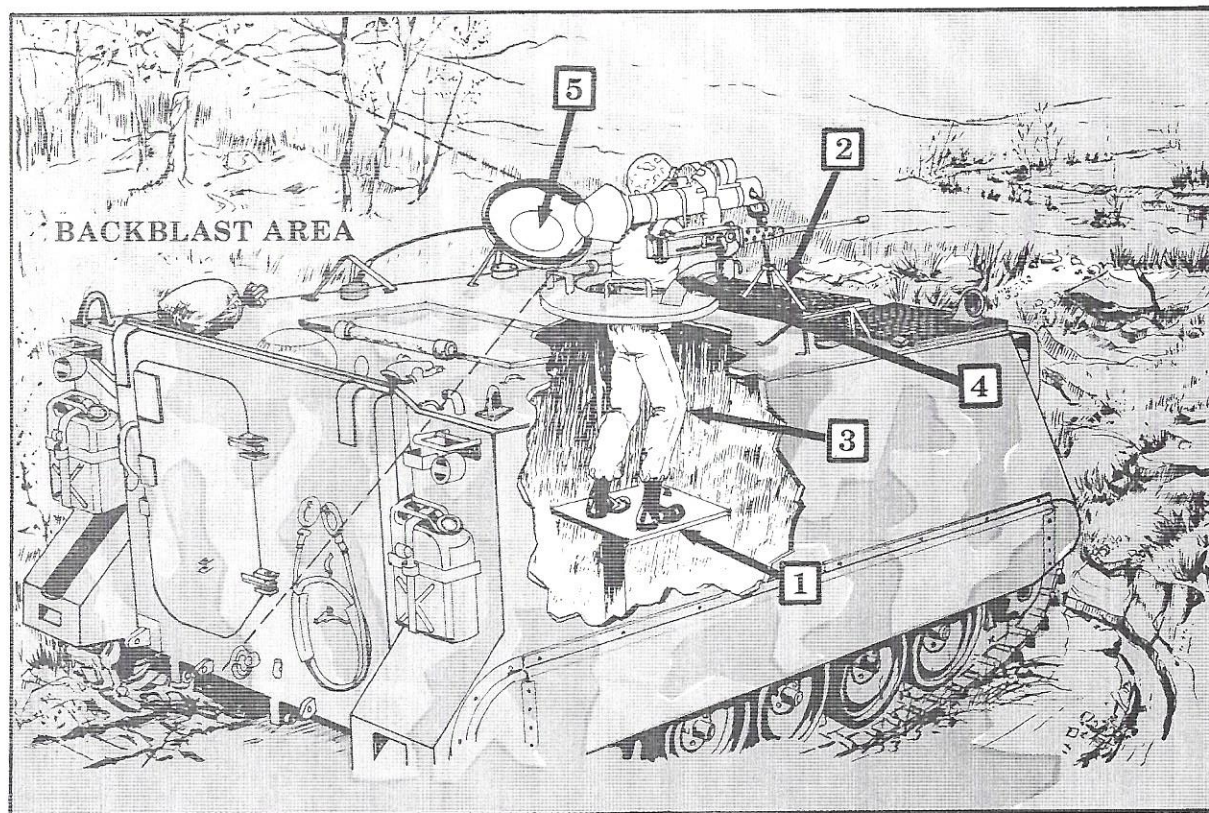
FIRING FROM THE COMMANDER'S HATCH

The Dragon is fired from the commander's hatch using the standing supported position.

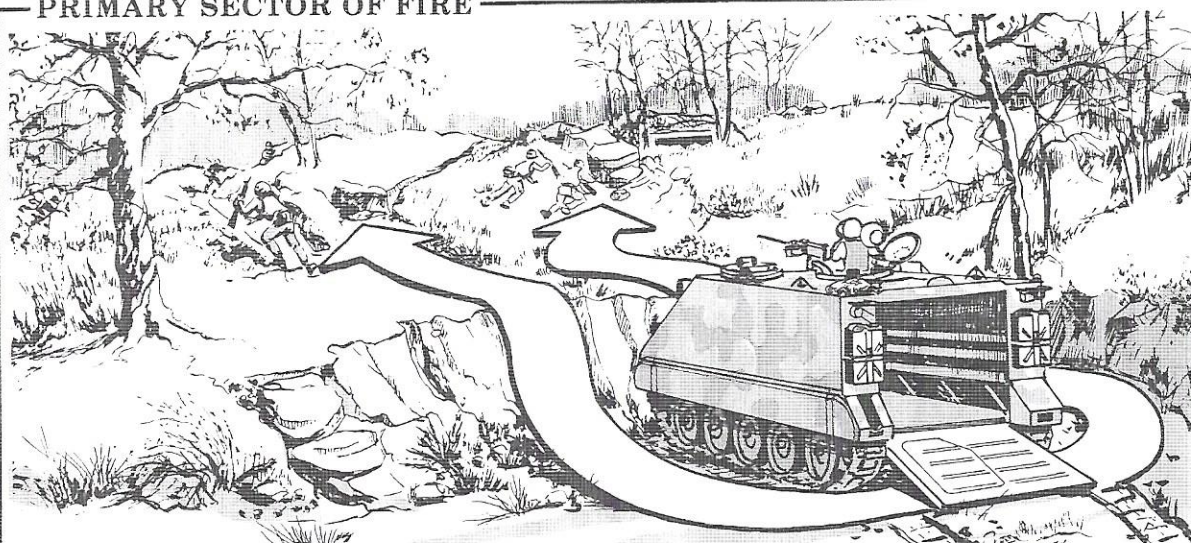
- 1 The gunner's feet are firmly planted on the commander's platform.
- 2 Bipod feet are well forward and anchored either on sandbags or the exhaust grills.
- 3 The gunner's knees are slightly bent.
- 4 His body is forward and stabilized against the cupola.
- 5 The hatch covers must not be in the backblast area.



CH



PRIMARY SECTOR OF FIRE

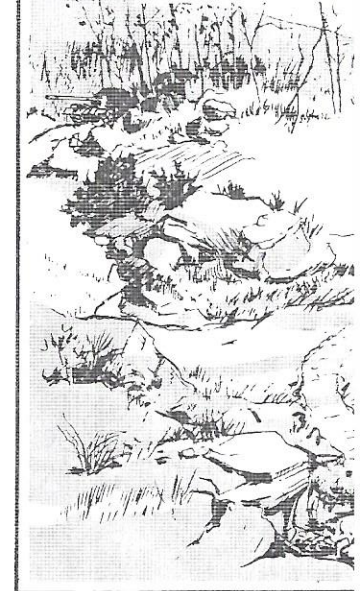


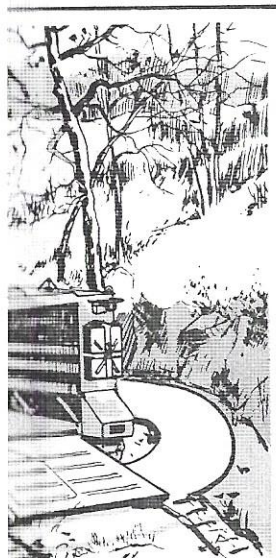
The APC should be positioned hull-down where both the caliber .50 machinegun and the Dragon can fire in support of the dismounted squad or other platoon elements.

The primary sector of fire from this position should be to the right front. The positioning allows both the driver and the gunner to observe and also provides maximum flexibility in employing both the Dragon and caliber .50 machinegun.

The cargo hatch must be closed prior to firing.

Although the gunner can fire from the rear of the APC, the gunner should be down and locked down. The sight is at least 2 feet and extension of

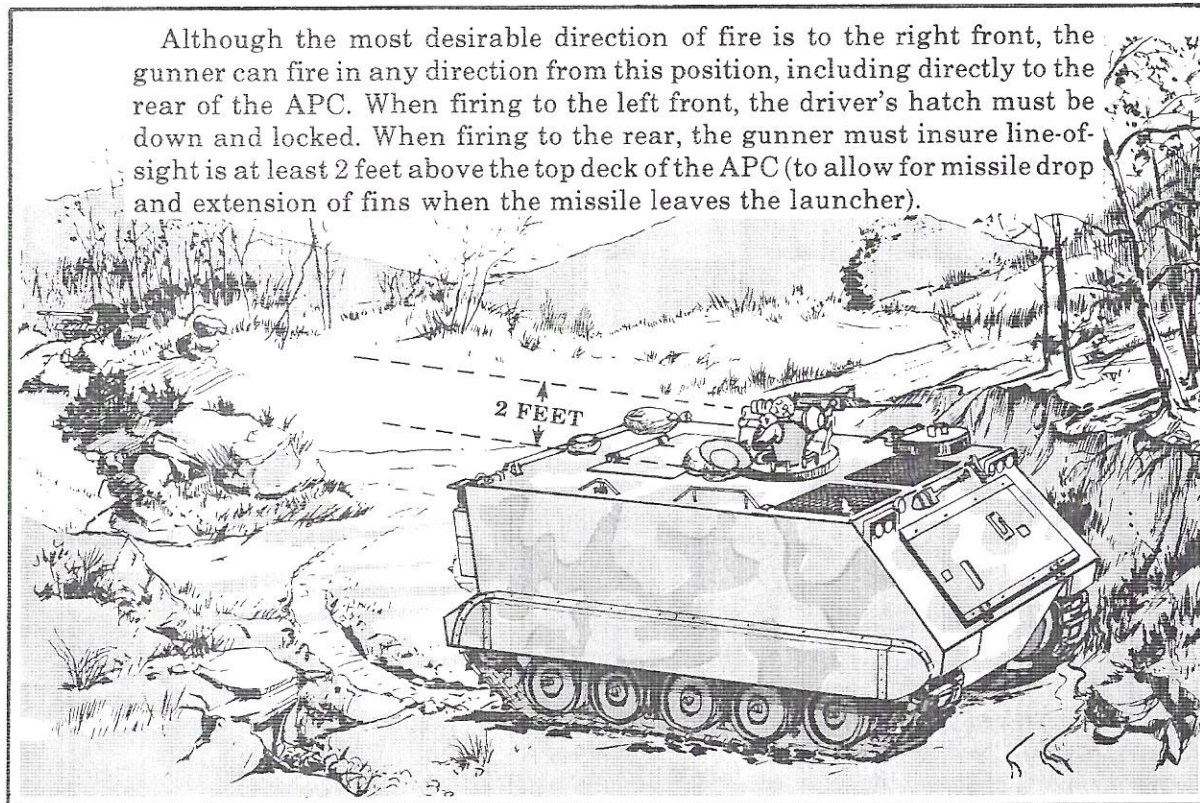




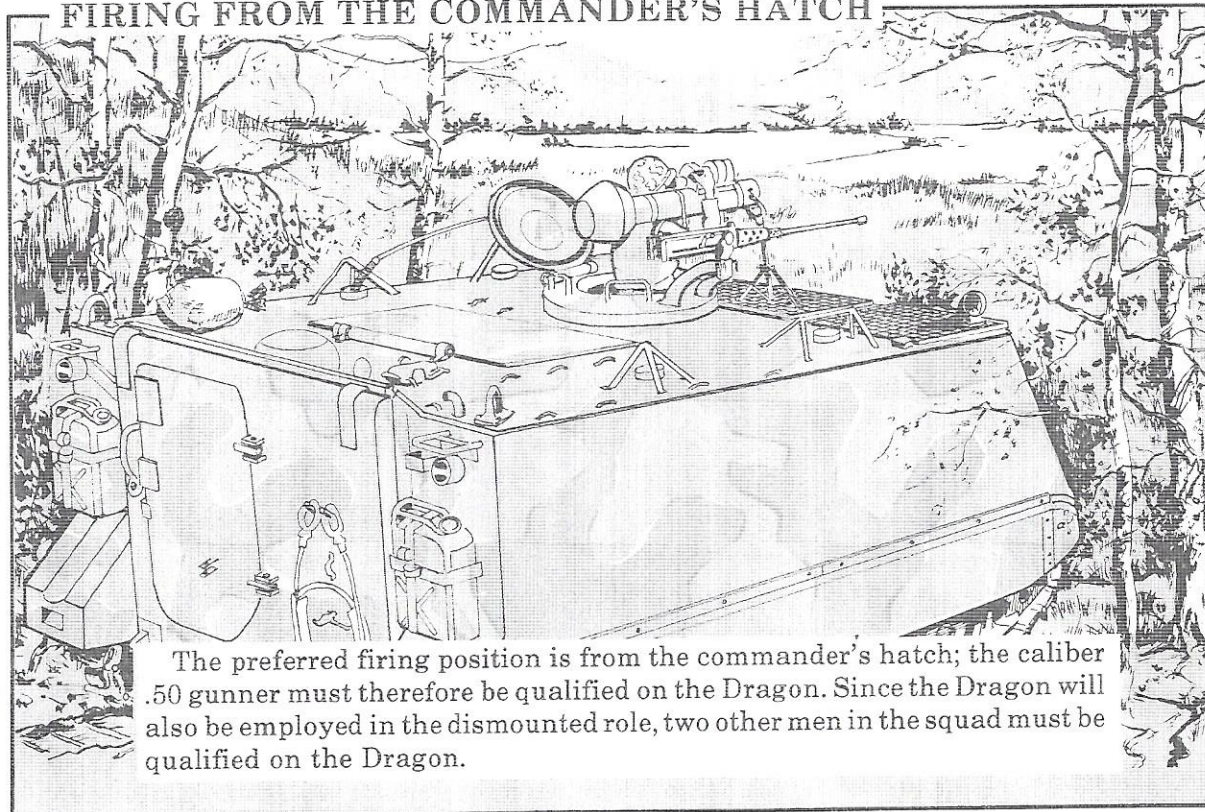
machinegun and the
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Although the most desirable direction of fire is to the right front, the gunner can fire in any direction from this position, including directly to the rear of the APC. When firing to the left front, the driver's hatch must be down and locked. When firing to the rear, the gunner must insure line-of-sight is at least 2 feet above the top deck of the APC (to allow for missile drop and extension of fins when the missile leaves the launcher).



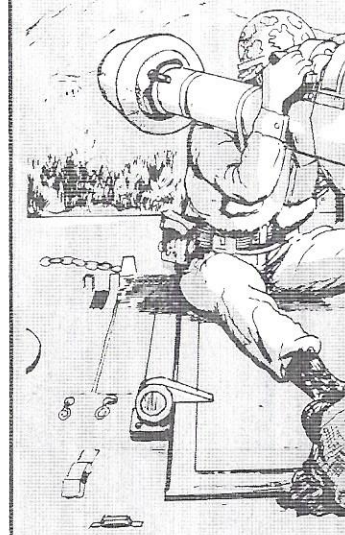
FIRING FROM THE COMMANDER'S HATCH



The preferred firing position is from the commander's hatch; the caliber .50 gunner must therefore be qualified on the Dragon. Since the Dragon will also be employed in the dismounted role, two other men in the squad must be qualified on the Dragon.

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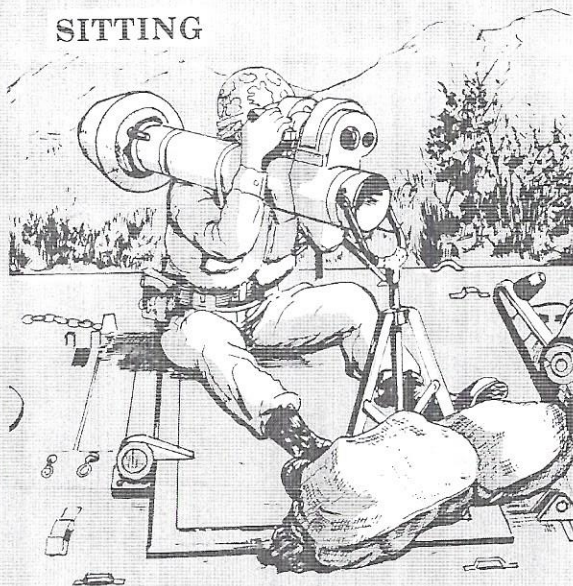
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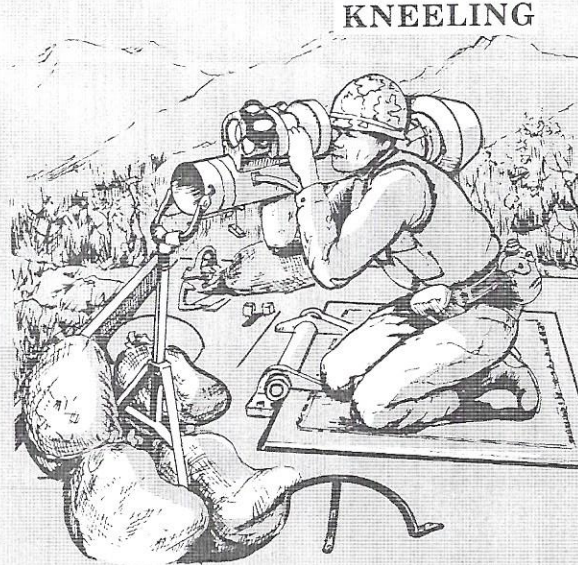
The Dragon can be firing position. The possible. The kneeling height to engage a t

FIRING FROM THE TOP DECK

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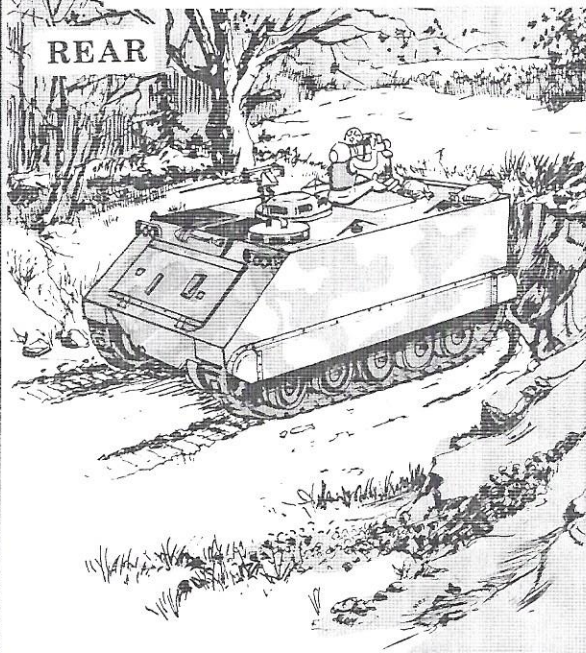
KNEELING



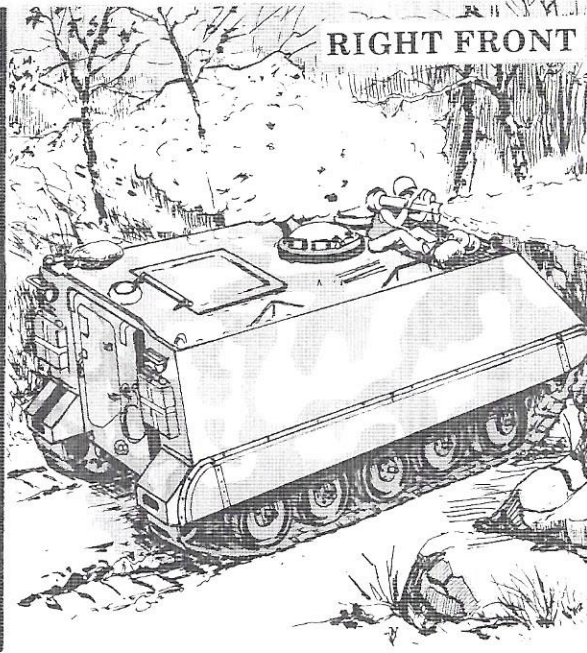
The Dragon can be fired from the top deck of the APC using the sitting or kneeling firing position. The sitting position is the most stable and will be used whenever possible. The kneeling position should be used only when the gunner needs more height to engage a target.

The Dragon may be fired from the right front of the APC or from any place to the rear of the track commander's hatch. The recommended firing area is the right front quarter of the APC.

REAR



RIGHT FRONT



1

The bipod feet is done by using grills, sandbags, and ration cases to

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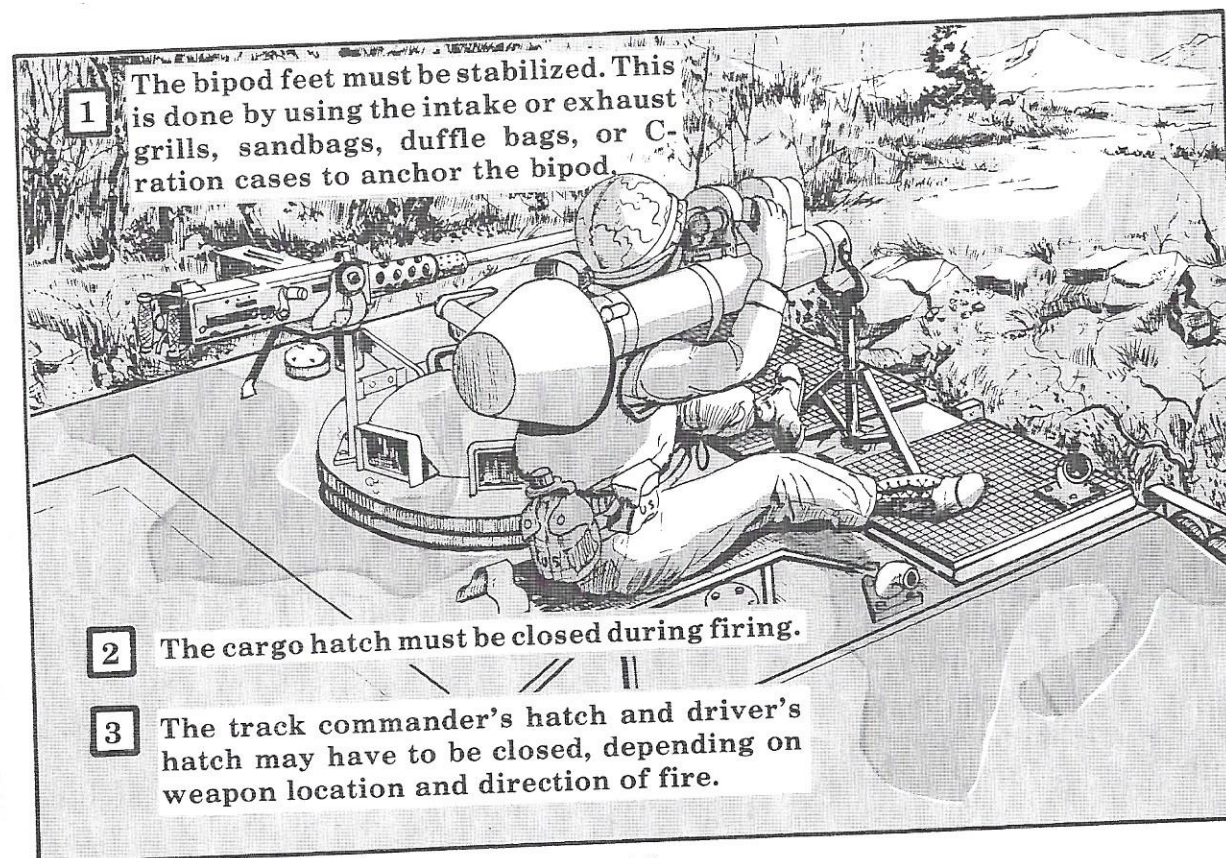
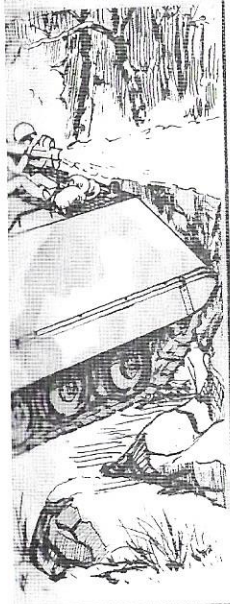
The cargo hatch

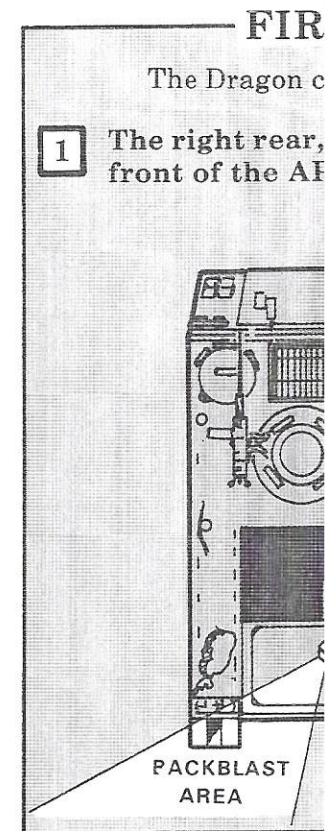
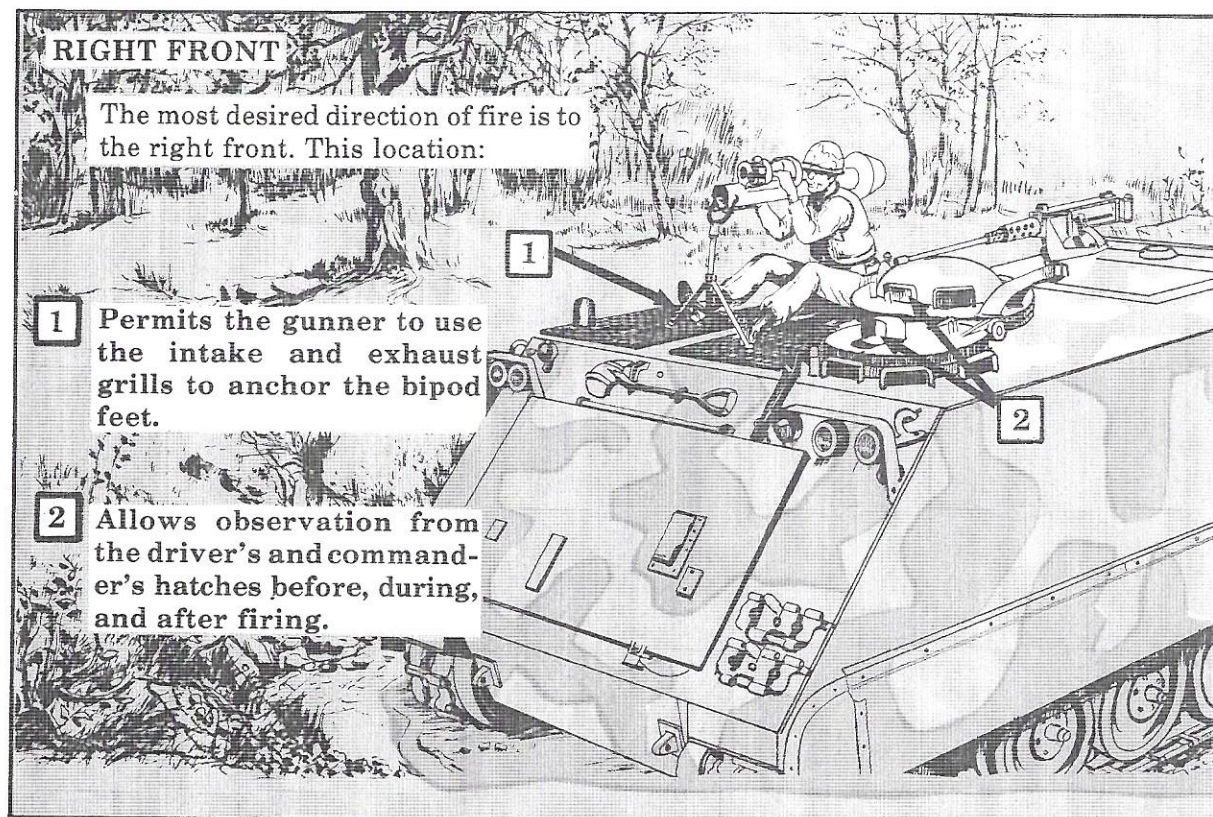
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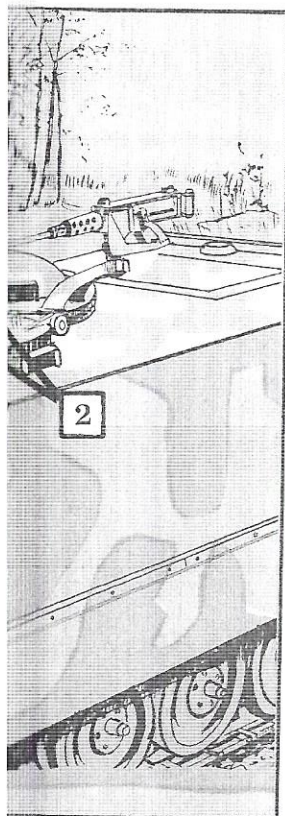
The track commander's hatch may have a weapon located

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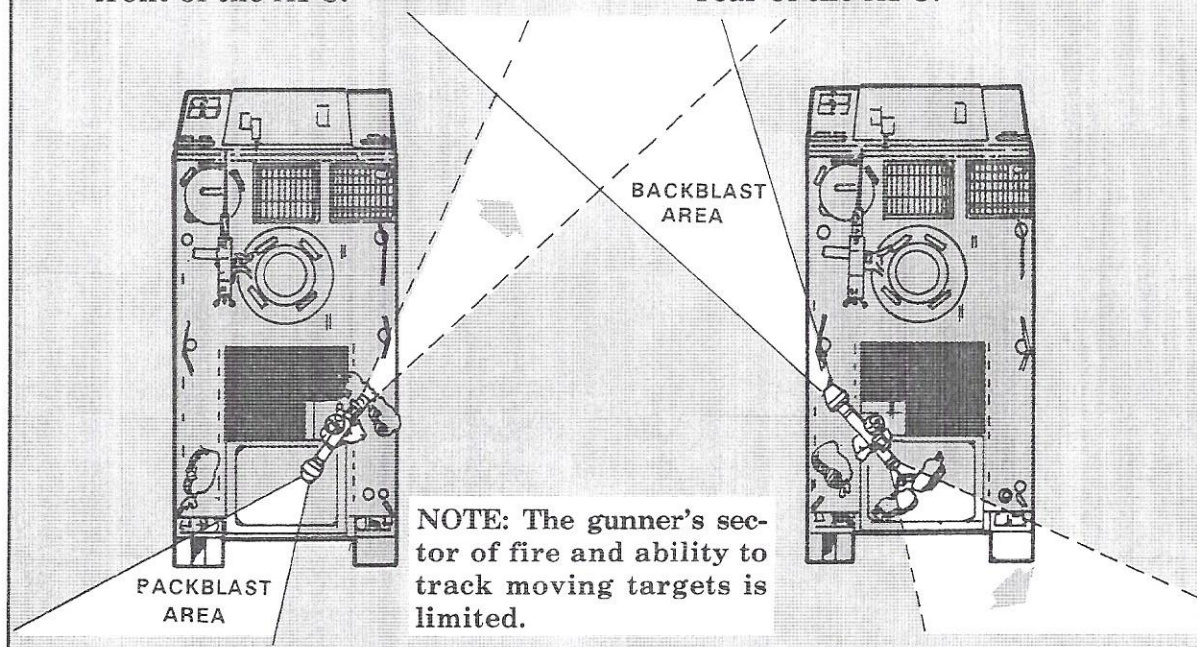


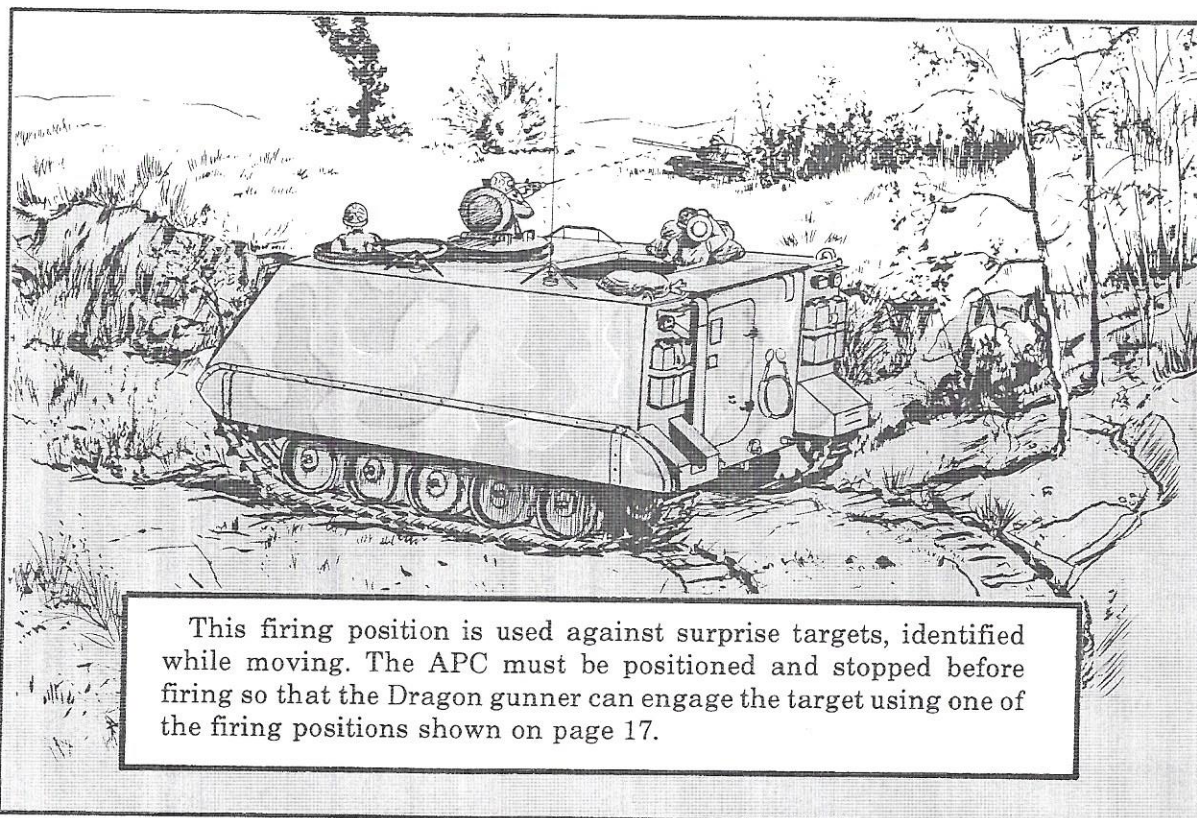
FIRING FROM THE CARGO HATCH

The Dragon can be fired from the opened cargo hatch using two locations.

1 The right rear, firing to the right front of the APC.

2 The left rear, firing to the right rear of the APC.



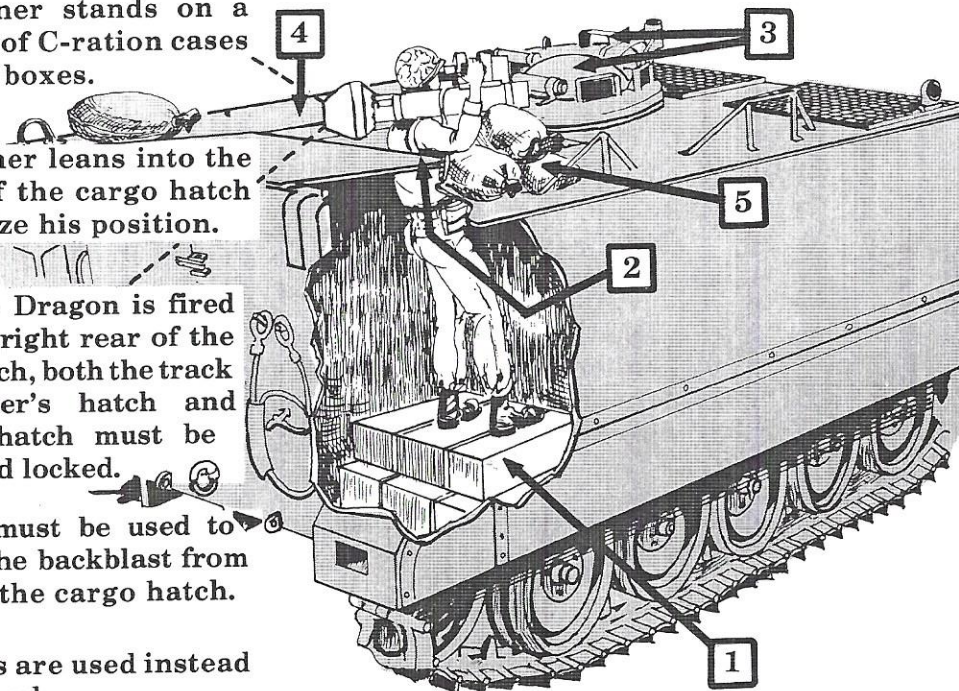


- 1 The gunner stands on the platform of C-rings or ammo boxes.
- 2 The gunner leans over the corner of the cargo hatch to stabilize his weapon.
- 3 When the Dragon is fired from the right side, the cargo hatch, both commander's and driver's hatches, must be closed and locked.
- 4 Caution must be taken to prevent the back of the APC from entering the ca.
- 5 Sandbags are used to support the bipod.



MODIFIED STANDING SUPPORTED POSITION

- 1 The gunner stands on a platform of C-ration cases or ammo boxes.
- 2 The gunner leans into the corner of the cargo hatch to stabilize his position.
- 3 When the Dragon is fired from the right rear of the cargo hatch, both the track commander's hatch and driver's hatch must be closed and locked.
- 4 Caution must be used to prevent the backblast from entering the cargo hatch.
- 5 Sandbags are used instead of the bipod.



FIRING SITTING OVER THE CARGO HATCH

The Dragon can be fired while the gunner is sitting on either rear corner of the cargo hatch door. From these positions the direction of fire is limited to the corresponding side of the APC.

A modified sitting position must be used.

- 1 Sandbags are used to secure the bipod feet.
- 2 The gunner stabilizes his firing position by bracing one foot against the forward edge of the cargo hatch and the other foot against the bipod leg.
- 3 Both the driver's hatch and commander's hatch must be closed when firing from the left side of the cargo hatch door.
- 4 The track commander's hatch must be closed when the gunner uses the position on the right side of the track.



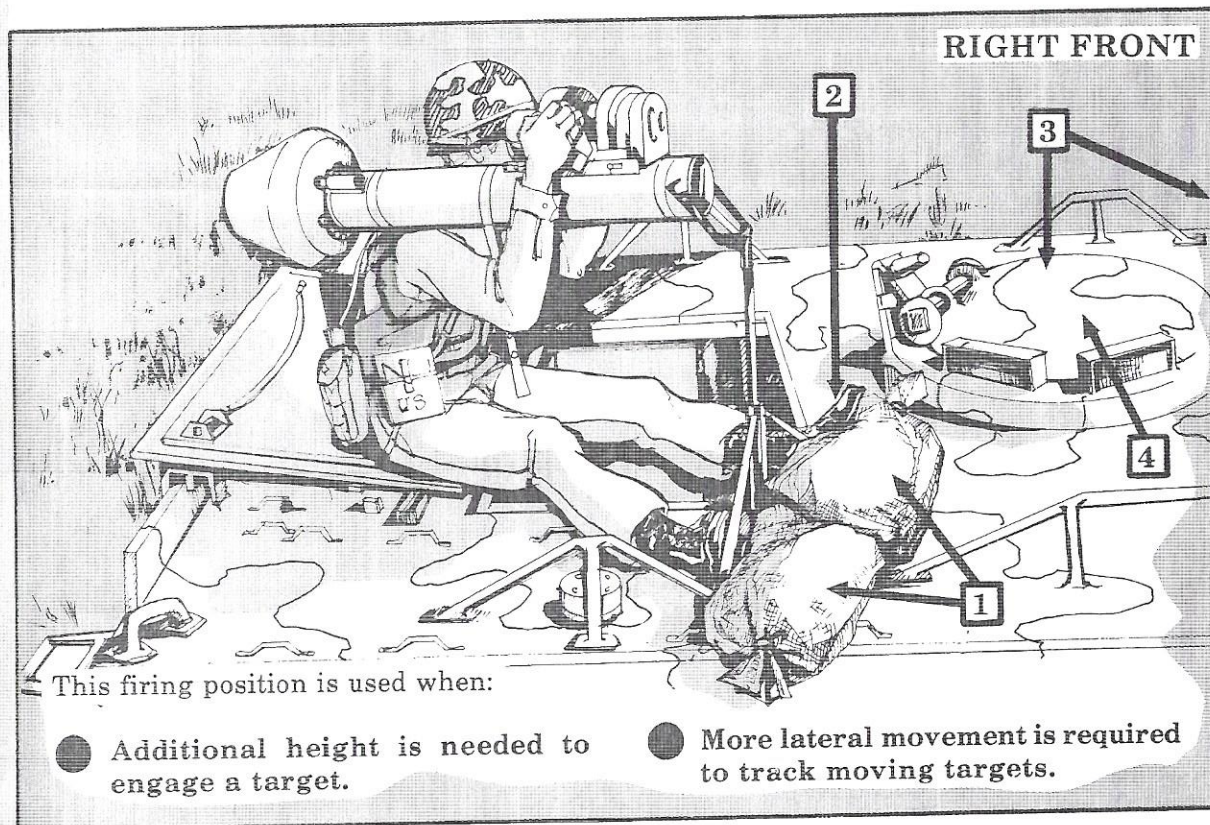
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— TRAINING —

- In accordance with TC 23-20, initial qualification for all Dragon gunners will be done from ground firing positions (standing supported, sitting, and kneeling).
- Once qualified on the Dragon, the caliber. 50 gunner will conduct monthly instructional training and quarterly qualification exclusively from the commander's hatch using the standing supported firing position.
- For other Dragon gunners, current experience indicates that 30 percent of the monthly instructional training and quarterly qualification firing should be done from the APC.
- Unit training must use the Dragon training equipment (launch effects trainer and monitoring set).
- Team drill must be practiced on the APC with the use of the Dragon field handling trainer. Gunners and squad members must be proficient in the preparation of subsequent rounds to insure a high rate of fire.

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CONCLUSION

This training circular describes the basic considerations necessary to effectively fire the Dragon from the M113 APC. Additional techniques and methods may be developed by the unit.

When the techniques required to accurately and effectively fire the Dragon from the M113 are mastered, every armored personnel carrier on the battlefield is a potential TANK KILLER.

DRAGON MOUNT DEVELOPMENTS

ANNEX A

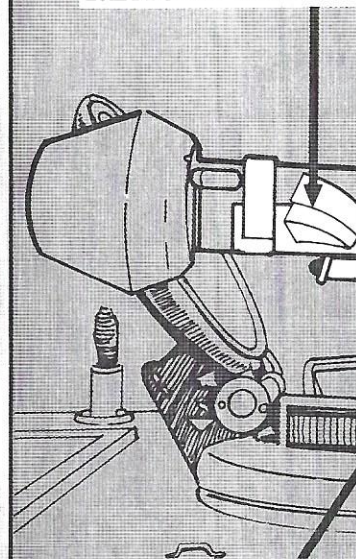
VISCOUS DAMPED MOUNT

Testing is under way on a viscous damped mount that greatly improves the effectiveness of the Dragon when fired from the APC. In initial tests with this mount, the Dragon was more effective than when fired from the bipod on the ground. When testing is completed and the design finalized, the viscous damped mount will be procured and issued on a priority basis.

OTHER MOUNTS

The Infantry Center has conducted initial tests with three additional mounts. Two of these required slight modification to attach mounting devices to the commander's cupola. The third was a modified version of the standard tripod for the M60 machinegun. **None of these systems were as effective as firing the Dragon using the bipod as described in this TC. Therefore, until the viscous damped mount - or another, better system - is developed, the methods described in this TC are recommended for use.**

REMOTE FIRING

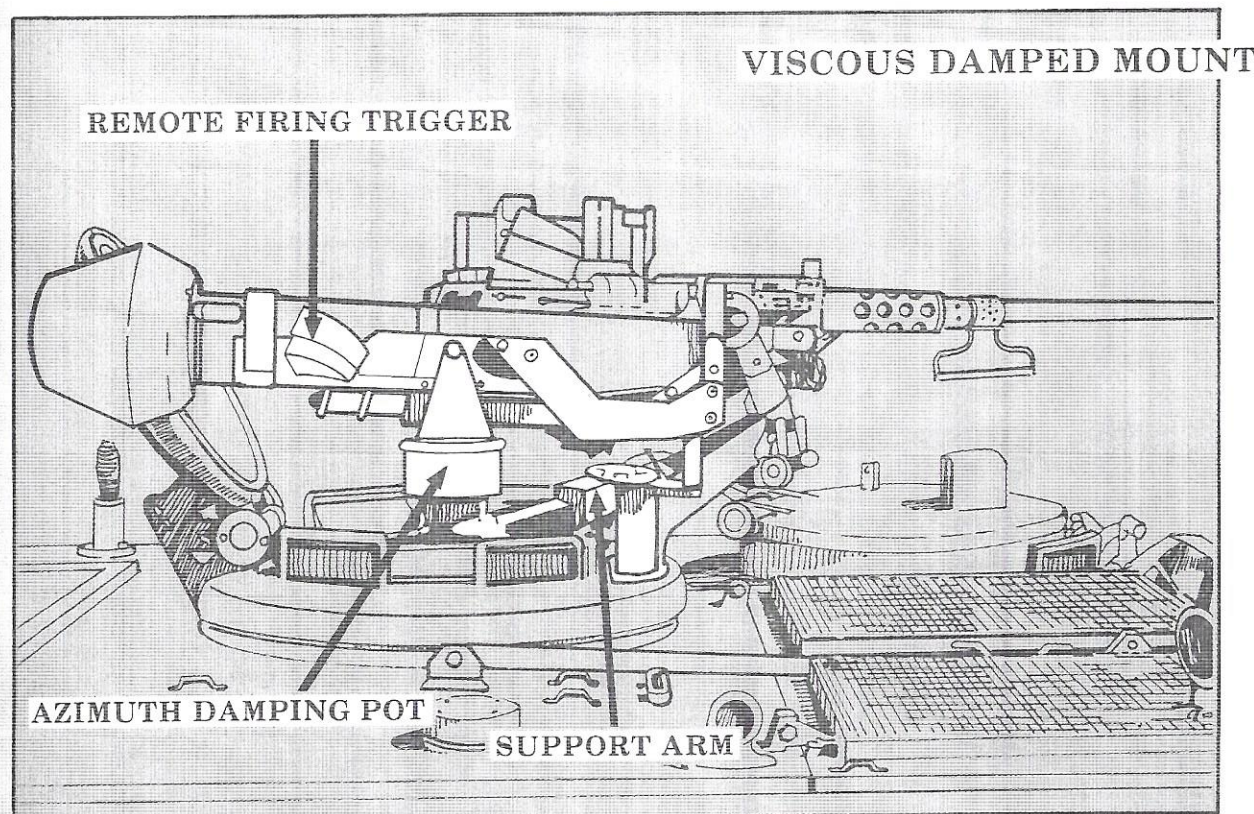


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SAFETY SUMMARY

ANNEX B

The following cautions and safety procedures must be emphasized when firing the Dragon from the APC. These must be stressed during training and live firing.

- Insure that the missile trajectory and backblast area are clear.
- When firing to the front, insure that the cargo hatch is closed.
- When firing to the rear, insure that the driver's and gunner's hatches are closed.
- Place sandbags over the fuel tank filler cap to protect it from backblast/flame.
- Do not touch the thermal battery when removing the expended launcher from the mount.
- Use ear plugs when firing.
- Do not fire over the heads of troops (training only).
- Unroll fatigue sleeves before firing.
- Watch out for expended ammunition casings. The backblast will cause them to become flying projectiles.
- Always check the missile for damage prior to firing.

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1. Is this training circular us

Yes ☐ No ☐

2. Is the information present

Yes ☐ No ☐

3. What should be added? _____

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QUESTIONNAIRE

TC 23-24-1, Firing the Dragon From the M113

This training circular provides methods for firing the Dragon from the deck of the armored personnel carrier. Your experience can help us improve our knowledge about this subject. PLEASE SEND US YOUR COMMENTS.

1. Is this training circular useful?

Yes ☐

No ☐

If no, please explain. _____

2. Is the information presented in a manner so that it is easy to understand?

Yes ☐

No ☐

If no, please explain. _____

3. What should be added? _____

4. What comments do you have about the firing positions? _____

5. What other comments do you have? _____

NOTE: Please attach any additional sheets desired. How can we contact you for more information?

NAME _____ RANK _____

DUTY POSITION _____

UNIT STATION _____ AUTOVON _____

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TC 23-24-1

19 APRIL 1976

By Order of the Secretary of the Army:

FRED C. WEYAND
General, United States Army
Chief of Staff

Official:

PAUL T. SMITH
Major General, United States Army
The Adjutant General

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FIRING THE DRAGON
from the
M113

TC 23-24-1